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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:	§	Atty File: CDT 1756-2
Willibrord A Groten	§	
	§	
Serial No.: 10/015,863	§	Group Art Unit: 1764
	§	
Filed: 12/12/2001	§	Examiner: Walter Dean Griffin

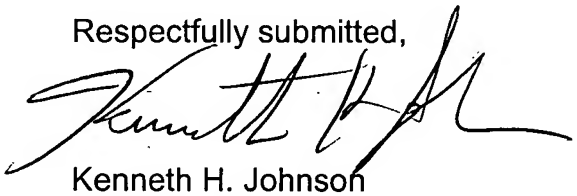
For: PROCESS FOR SULFUR REDUCTION IN NAPHTHA STREAMS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Transmitted herewith is the REPLY BRIEF in response to new points raised in the EXAMINER'S ANSWER.

Respectfully submitted,



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Date: 02/20/2006

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on 02/20/2006

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REPLY BRIEF

Commissioner for Patents
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This paper is presented in response the to EXAMINER'S ANSWER mailed on February 2, 2005, to answer the examiner's new points of arguments (1) treating two fractions having boiling points different from that claimed as disclosed by Fletcher is the same as treating the specific cuts claimed and (2) treating in two bed is the same as in two reactions because the conditions are not claimed. Applicant suggests the positions taken by the examiner are inconsistent in the two points raised. In the first point the examiner ignores the recited conditions, whereas in the second point the examiner relies on the absence of specific conditions.

1. The boiling points of the fractions as claimed are selected for reasons. While the "light" fraction of Fletcher may contain the mercaptans that are treated by caustic wash as in the claimed invention, it is the intermediate cut which is of interest. The intermediate cut in the present invention contains thiophene and some mercaptans which are easier to treat than the heavier sulfur compounds. The examiner's claim that it doesn't matter that

the claimed boiling points are different because Fletcher treats them all the same (because the heavier fraction is fed to the top of the reactor) ignores the invention. A comparison of the cuts are as follows:

Cut No.	Fletcher	Claim 1
1	C5-200°F	C5-150°
2	200-290°F	150-250°F
3	290°F+	250°F+

The comparison explicitly shows the difference between Fletcher and the claimed invention. While Fletcher discloses that the light fraction, cut 1, may be subjected to caustic wash only, his preferred embodiment shows all of cut 1 being fed to the lower end of the reactor. In the claimed invention cut 1 is not subjected to any hydrodesulfurization or olefin saturation. While Fletcher notes that it is desirable not to hydrogenate the olefin in cut 1, he clearly does. He makes up for this loss in a separate reactor where an acid catalyst is used to crack some of the naphtha and produce olefins. He has to do this because his cut 1 contains thiophene (b.p. 183°F). The claimed invention avoids this by making the first cut at 150°F which puts thiophene in cut 2. If, on the other hand, Fletcher chooses to caustic wash cut 1 to remove the mercaptans he leaves the thiophene. In neither case is the scenario the same as the claimed invention. Either he hydrogenates some of the light olefins or leaves in the thiophene.

2. Leading directly from the above, the use of two beds cannot be equivalent to two separate reactors because the separate reactors can be operated at different conditions. While the conditions are not claimed, the claims must be interpreted in light of the specification. In the specification from page 3 line 29 to page 4 line 4 the treatment of

thiophene is disclosed as requiring less severe conditions than the heavier sulfur compounds. Thus, it is implicit that the conditions in the second reactor are different (less severe) than those in the first reactor. The only condition which changes in Fletcher is the residence time or space velocity; whereas the pressure, temperature and space velocity can be independently controlled in the claimed invention. For this reason sequential reactors are not considered the equivalent of multibed reactors in common chemical engineering process designs. Unless the examiner can point to a reference that specifically equates the two, the claimed invention is not obvious over Fletcher. The examiner has not cited any evidence that one multibed reactor is the equivalent of two separate reactors. Silence in a reference is not a proper substitute for an adequate disclosure of facts. *In re Burt*, 148 USPQ 548 (CCPA 1966).

Applicant/appellant respectfully renews the request that the board reverse the examiner.

Respectfully Submitted,

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